



# Interferometer-Based Studies of Quantum Hall Phenomena

## Citation

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6\_27\_07.1 - Actual Results  
 Substrate: F-A9858 gb  
 As Temp: 363  
 As Set: 7e-6  
 Comments: C. Marcus repeat of 2-25-05.1

Label	relay	rate	temp	set pt
A18	1	0.4066	1055.000	18.860
Ga5	3	1.2559	945.000	944.000

Layer#	Layer Type	Thickness	Time	Total Time	A18	Sub (V)	Si (A)	C (A)
1	chgSi chgC As11	0.00	60.00	60.00	---	25.911	0.001	0.007
2	Ga5As11	7000.00	5573.69	5633.69	---	25.909	0.002	0.006
3	PauseAs11	0.00	3600.00	9233.69	---	25.910	0.002	0.007
4*	A18Ga5As11	100.00	60.15	9293.84	0.245	25.914	0.002	0.003
5*	Ga5As11	30.00	23.89	9317.73	---	25.911	0.002	0.004
6* (100)	PauseAs11	0.00	15.00	9332.73	---	25.915	0.002	0.006
304	A18Ga5As11	3000.00	1804.51	20941.97	0.245	25.910	0.003	0.006
305	A18As11	19.81	48.72	20990.69	---	25.913	0.003	0.006
306	Ga5As11	5.66	4.51	20995.19	---	25.913	0.002	0.006
307	t-627.9	0.00	10.00	21005.19	---	25.910	0.004	0.006
308	chgTemp As11	0.00	90.00	21095.19	---	0.018	0.003	0.006
309	chgTemp As11	0.00	2.00	21097.19	---	17.107	0.003	0.006
310	chgSi As11	0.00	15.00	21112.19	---	17.103	7.413	0.006
311	SiAs11	0.00	28.00	21140.19	---	17.103	7.413	0.008
312	chgSi As11	0.00	10.00	21150.19	---	17.101	0.000	0.007
313	Ga5As11	22.64	18.03	21168.22	---	17.104	0.002	0.008
314	t-455.2	0.00	10.00	21178.22	---	17.104	0.003	0.009
315	chgTemp As11	0.00	85.00	21263.22	---	32.168	0.002	0.007
316	startTempAs11	0.00	2.00	21265.22	---	25.911	0.002	0.007
317	A18As11	19.81	48.72	21313.94	---	25.910	0.002	0.004
318	A18Ga5As11	800.00	481.20	21795.15	0.245	25.913	0.006	0.006
319	PauseAs11	0.00	50.00	21845.15	---	25.911	0.002	0.006
320	Ga5As11	300.00	238.87	22084.02	---	25.914	0.003	0.008
321	t-621.0	0.00	10.00	22094.02	---	25.914	0.004	0.008
322	PauseAs11	0.00	40.00	22134.02	---	25.913	0.003	0.007
323	A18Ga5As11	800.00	481.20	22615.22	0.245	25.913	0.002	0.006
324	A18As11	19.81	48.72	22663.94	---	25.913	0.001	0.007
325	Ga5As11	5.66	4.51	22668.45	---	25.910	0.002	0.007
326	chgTemp As11	0.00	90.00	22758.45	---	0.014	0.001	0.006
327	chgTemp As11	0.00	2.00	22760.45	---	17.106	0.002	0.006
328	chgSi As11	0.00	15.00	22775.45	---	17.104	7.410	0.007
329	SiAs11	0.00	55.00	22830.45	---	17.104	7.410	0.007
330	chgSi As11	0.00	10.00	22840.45	---	17.104	0.000	0.008
331	Ga5As11	22.64	18.03	22858.48	---	17.104	0.002	0.006
332	t-458.6	0.00	10.00	22868.48	---	17.105	0.002	0.003
333	chgTemp As11	0.00	85.00	22953.48	---	32.168	0.002	0.006
334	startTempAs11	0.00	2.00	22955.48	---	25.914	0.002	0.007
335	A18As11	19.81	48.72	23004.20	---	25.914	0.002	0.007
336	A18Ga5As11	980.00	589.47	23593.67	0.245	25.916	0.002	0.007
337	Ga5As11	100.00	79.62	23673.29	---	25.915	0.002	0.006
338	t-625.2	0.00	10.00	23683.29	---	25.915	0.002	0.004
339	chgTemp As11	0.00	2.00	23685.29	---	15.086	0.002	0.006
340	chgSi chgC As11	0.00	60.00	23745.29	---	15.083	0.389	0.395
341	beepAs11	0.00	10.00	23755.29	---	---	---	---

total layers: 341  
 total time: 23755.29 sec.  
 total thickness: 26115.8 A.

6-27-07.1.sum.txt  
 SAMPLE: 6-27-07.1 STRUCTURE: 2dx1 MEASURED: 7/10/2007 2:16 PM  
 POSITION: A DARK CONTACTS: flats MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 298.7 Ro: 1.9042E+3 Rh: 9.3614E+6 M: 4.9162E+3 D: 6.6764E+11  
 T: 77.0 Ro: 8.8045E+1 Rh: 1.6536E+7 M: 1.8781E+5 D: 3.7797E+11  
 T: 3.8 Ro: 2.3205E+0 Rh: 2.2644E+7 M: 9.7585E+6 D: 2.7601E+11  
 AFTER LIGHT  
 T: 3.8 Ro: 2.5535E+0 Rh: 2.1752E+7 M: 8.5183E+6 D: 2.8734E+11

Substrate: 7\_28\_08.2 - Actual Results  
 AS Temp: 289  
 AS Sel: 9.5e-6  
 Comments:  
 Einstein quiet & gatable

Label	relay	rate	temp	set pt
Ga7	2	2.7928	869.000	869.000
Ga5	3	1.8377	965.000	964.000
Al4	5	0.8956	63.000	962.000

Layer#	Layer Type	Thickness	Time	Total Time Al4	Sub (V)	Si (A)	C (A)
1	chgSi chgc As10	0.00	60.00	60.00	24.897	0.002	0.007
2*	Ga7As10	500.00	179.03	239.03	24.897	0.002	0.006
3* (10)	PauseAs10	0.00	50.00	289.03	24.898	0.002	0.007
22*	Ga5As10	30.00	16.32	2366.64	24.898	0.000	0.007
23*	PauseAs10	0.00	10.00	2376.64	24.901	0.000	0.008
24* (100)	Ga5Al4As10	100.00	36.59	2413.23	24.900	0.001	0.008
322	t-645.7	0.00	10.00	8651.37	24.898	0.000	0.007
323	Ga5Al4As10	2500.00	914.65	9566.02	24.900	0.001	0.006
324	chgTemp As10	0.00	110.00	9676.02	0.012	0.000	0.008
325	chgTemp As10	0.00	2.00	9678.02	14.568	0.000	0.007
326	chgSi As10	0.00	15.00	9693.02	14.568	6.908	0.009
327	SiAs10	0.00	25.00	9718.02	14.570	6.910	0.007
328	chgSi As10	0.00	10.00	9728.02	14.572	0.000	0.008
329	Ga5Al4As10	14.00	5.12	9733.14	14.570	0.000	0.008
330	t-443.2	0.00	10.00	9743.14	14.570	0.000	0.006
331	chgTemp As10	0.00	85.00	9828.14	29.127	0.001	0.008
332	startTempAs10	0.00	2.00	9830.14	24.896	0.002	0.007
333	t-648.6	0.00	10.00	9840.14	24.897	0.001	0.008
334	Ga5Al4As10	1600.00	585.37	10425.51	24.900	0.000	0.006
335	Ga7Al4As10	1400.00	379.57	10805.08	24.900	0.000	0.008
336	Ga7As10	480.00	171.87	10976.95	24.903	0.001	0.008
337	PauseAs10	0.00	100.00	11076.95	24.901	0.001	0.009
338	Ga7Al4As10	1400.00	379.57	11456.52	24.902	0.000	0.008
339	Ga5Al4As10	1600.00	585.37	12041.90	24.903	0.002	0.006
340	chgTemp As10	0.00	110.00	12151.90	0.015	0.000	0.008
341	chgTemp As10	0.00	2.00	12153.90	14.572	0.001	0.007
342	chgSi As10	0.00	15.00	12168.90	14.571	6.907	0.006
343	SiAs10	0.00	60.00	12228.90	14.572	6.909	0.006
344	chgSi As10	0.00	10.00	12238.90	14.573	0.000	0.006
345	Ga5Al4As10	14.00	5.12	12244.02	14.570	0.000	0.008
346	t-447.6	0.00	10.00	12254.02	14.571	0.001	0.007
347	chgTemp As10	0.00	85.00	12339.02	29.128	0.002	0.007
348	startTempAs10	0.00	2.00	12341.02	24.898	0.001	0.006
349	Ga5Al4As10	866.00	316.83	12657.85	24.901	0.001	0.006
350	Ga5As10	100.00	54.42	12712.27	24.901	0.001	0.006
351	t-640.4	0.00	10.00	12722.27	24.902	0.001	0.004
352	chgTemp As10	0.00	2.00	12724.27	8.063	0.002	0.006
353	chgSi chgc As10	0.00	60.00	12784.27	8.060	0.389	0.396
354	BeepAs10	0.00	10.00	12794.27	8.060	0.390	0.395

total layers: 354  
 total time: 12794.27 sec.  
 total thickness: 27974.0 A.

SAMPLE: 7-28-08.2

POSITION: B

COMMENTS:

SOURCE CURRENT: 10.0uA

T: 302.4

T: 77.0

T: 3.8

AFTER LIGHT

T: 3.8

STRUCTURE: 2Dx1 MEASURED: 7/29/2008 5:33 PM  
 DARK CONTACTS: corners MANUAL CONTROL

MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0

Ro: 7.5642E+3 Rh: 4.6879E+7 M: 6.1975E+3 D: 1.3332E+11

Ro: 3.9666E+2 Rh: 7.3621E+7 M: 1.8560E+5 D: 8.4895E+10

Ro: 1.6277E+1 Rh: 8.1042E+7 M: 4.9789E+6 D: 7.7121E+10

Ro: 7.5684E+0 Rh: 4.9906E+7 M: 6.5940E+6 D: 1.2524E+11

13.4M

1.24"

Nice no // cond.

11-18-08.1 - Actual Results  
Substrate: F-87246 B3

As Temp: 289

As Set: 9.5e-6

Comments: Einstein quiet & gatable

*For Jim Eisenstein*

label	relay	rate	temp	set pt
Ga7	2	2.8187	878.000	877.500
Ga5	3	1.8668	970.000	969.000
Al4	5	0.8944	971.000	970.000

Layer#	Layer Type	Thickness	Time	Total Time	Al4	Sub (V)	Si (A)	C (A)
1	chgsi chgC As10	0.00	60.00	60.00	---	28.114	0.003	0.008
2*	Ga7As10	500.00	177.39	237.39	---	28.109	0.003	0.009
3* (10)	PauseAs10	0.00	50.00	287.39	---	28.106	0.004	0.010
22*	Ga5As10	30.00	16.07	2349.94	---	28.109	0.002	0.009
23*	PauseAs10	0.00	10.00	2359.94	---	28.106	0.002	0.008
24* (100)	Ga5Al4As10	100.00	36.22	2396.15	0.324	28.106	0.002	0.008
322	t-652.0	0.00	10.00	8572.51	---	28.105	0.003	0.008
323	Ga5Al4As10	2500.00	905.40	9477.91	0.324	28.108	0.002	0.010
324	chgTemp As10	0.00	110.00	9587.91	---	0.010	0.002	0.011
325	chgTemp As10	0.00	2.00	9589.91	---	14.564	0.002	0.010
326	chgSi As10	0.00	15.00	9604.91	---	14.564	6.913	0.011
327	SiAs10	0.00	25.00	9629.91	---	14.566	6.913	0.009
328	chgSi As10	0.00	10.00	9639.91	---	14.566	0.000	0.010
329	Ga5Al4As10	14.00	5.07	9644.98	0.324	14.564	0.002	0.010
330	t-430.3	0.00	10.00	9654.98	---	14.563	0.002	0.008
331	chgTemp As10	0.00	85.00	9739.98	---	29.843	0.002	0.009
332	startTempAs10	0.00	2.00	9741.98	---	28.103	0.002	0.010
333	PauseAs10	0.00	120.00	9861.98	---	28.104	0.002	0.009
334	t-642.1	0.00	10.00	9871.98	---	28.108	0.002	0.010
335	Ga5Al4As10	600.00	217.30	10089.28	0.324	28.110	0.002	0.008
336	Ga7Al4As10	700.00	188.52	10277.80	0.241	28.110	0.002	0.008
337	Ga7As10	300.00	106.43	10384.23	---	28.108	0.002	0.007
338	PauseAs10	0.00	100.00	10484.23	---	28.105	0.002	0.010
339	Ga7Al4As10	700.00	188.52	10672.76	0.241	28.108	0.002	0.011
340	Ga5Al4As10	600.00	217.30	10890.05	0.324	28.109	0.003	0.010
341	chgTemp As10	0.00	110.00	11000.05	---	0.010	0.002	0.009
342	chgTemp As10	0.00	2.00	11002.05	---	14.567	0.003	0.009
343	chgSi As10	0.00	15.00	11017.05	---	14.566	6.913	0.009
344	SiAs10	0.00	60.00	11077.05	---	14.563	6.913	0.009
345	chgSi As10	0.00	10.00	11087.05	---	14.563	0.000	0.010
346	Ga5Al4As10	14.00	5.07	11092.12	0.324	14.564	0.004	0.009
347	t-428.4	0.00	10.00	11102.12	---	14.564	0.002	0.011
348	chgTemp As10	0.00	85.00	11187.12	---	29.843	0.006	0.010
349	startTempAs10	0.00	2.00	11189.12	---	28.104	0.006	0.010
350	PauseAs10	0.00	120.00	11309.12	---	28.104	0.003	0.008
351	Ga5Al4As10	866.00	313.63	11622.75	0.324	28.109	0.002	0.009
352	Ga5As10	100.00	53.57	11676.32	---	28.105	0.002	0.008
353	t-650.6	0.00	10.00	11686.32	---	28.106	0.004	0.009
354	chgTemp As10	0.00	2.00	11688.32	---	8.059	0.004	0.010
355	chgSi chgC As10	0.00	60.00	11748.32	---	8.059	0.392	0.399
356	BeepAs10	0.00	10.00	11758.32	---	8.057	0.392	0.399

total layers: 356

total time: 11758.32 sec.

total thickness: 24394.0 A.

*EISENSTEIN*

SAMPLE: 11-18-08.1

STRUCTURE: 2DX1 MEASURED: 11/24/2008 1:42 PM

POSITION: A

DARK

CONTACTS: corners

MANUAL CONTROL

COMMENTS:

SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0

T: 297.2

Ro: 3.5573E+3

Rh: 2.6179E+7

M: 7.3591E+3

D: 2.3874E+11

T: 77.5

Ro: 1.6486E+2

Rh: 3.5620E+7

M: 2.1607E+5

D: 1.7546E+11

T: 3.8

Ro: 3.3998E+0

Rh: 4.0316E+7

M: 1.1858E+7

D: 1.5502E+11

AFTER LIGHT

T: 3.8

Ro: 2.5385E+0

Rh: 2.2876E+7

M: 9.0115E+6

D: 2.7321E+11

*178M*

*2.32"*

2.22.10.1 - Actual Results  
 Substrate: WT 19614 #47 block III  
 As Temp: 292  
 As Set: 7.9e-6  
 Comments: Gervais Sample

label	relay	rate	temp	set pt					
A18	1	0.8978	1003.000	17.870					
Ga7	2	2.8187	928.000	928.500					
Layer#	Layer Type	Thickness	Time	Total Time	A18	Sub (V)	Si (A)	C (A)	
1	chgSi chgC As10	0.00	60.00	60.00	---	28.127	0.001	0.011	
2	Ga7As10	7000.00	2483.41	2543.41	---	28.126	0.002	0.008	
3	PauseAs10	0.00	3000.00	5543.41	---	28.127	0.002	0.008	
4*	A18Ga7As10	100.00	26.91	5570.32	0.242	28.123	0.002	0.007	
5*	Ga7As10	30.00	10.64	5580.96	---	28.122	0.002	0.008	
6* (100)	PauseAs10	0.00	15.00	5595.96	---	28.124	0.002	0.009	
304	A18Ga7As10	2500.00	672.68	11471.11	0.242	28.118	0.002	0.011	
305	t-641.5	0.00	10.00	11481.11	---	28.117	0.002	0.012	
306	A18As10	19.81	22.07	11503.18	---	28.120	0.003	0.010	
307	Ga7As10	5.66	2.01	11505.19	---	28.120	0.003	0.010	
308	chgTemp As10	0.00	120.00	11625.19	---	0.014	0.002	0.011	
309	chgTemp As10	0.00	2.00	11627.19	---	18.100	0.002	0.010	
310	chgSi As10	0.00	15.00	11642.19	---	18.091	7.413	0.010	
311	SiAs10	0.00	17.00	11659.19	---	18.091	7.415	0.010	
312	chgSi As10	0.00	10.00	11669.19	---	18.091	0.000	0.011	
313	Ga7As10	22.64	8.03	11677.22	---	18.091	0.002	0.011	
314	t-448.0	0.00	10.00	11687.22	---	18.092	0.003	0.010	
315	chgTemp As10	0.00	107.00	11794.22	---	32.155	0.002	0.012	
316	startTempAs10	0.00	2.00	11796.22	---	28.118	0.002	0.012	
317	A18As10	19.80	22.05	11818.27	---	28.116	0.002	0.012	
318	A18Ga7As10	1600.00	430.51	12248.79	0.242	28.121	0.001	0.010	
319	Ga7As10	400.00	141.91	12390.70	---	28.120	0.002	0.010	
320	A18Ga7As10	1600.00	430.51	12821.21	0.242	28.118	0.002	0.011	
321	t-639.5	0.00	10.00	12831.21	---	28.122	0.002	0.010	
322	A18As10	19.81	22.07	12853.27	---	28.121	0.002	0.012	
323	PauseAs10	0.00	10.00	12863.27	---	28.121	0.001	0.011	
324	Ga7As10	5.66	2.01	12865.28	---	28.122	0.002	0.010	
325	chgTemp As10	0.00	120.00	12985.28	---	0.013	0.001	0.011	
326	chgTemp As10	0.00	2.00	12987.28	---	18.091	0.002	0.011	
327	chgSi As10	0.00	15.00	13002.28	---	18.092	7.414	0.010	
328	SiAs10	0.00	33.00	13035.28	---	18.091	7.413	0.011	
329	chgSi As10	0.00	10.00	13045.28	---	18.093	0.000	0.011	
330	Ga7As10	22.64	8.03	13053.31	---	18.093	0.000	0.010	
331	t-448.1	0.00	10.00	13063.31	---	18.091	0.001	0.011	
332	chgTemp As10	0.00	107.00	13170.31	---	32.152	0.001	0.013	
333	startTempAs10	0.00	2.00	13172.31	---	28.115	0.002	0.013	
334	A18As10	19.81	22.07	13194.38	---	28.115	0.001	0.011	
335	A18Ga7As10	980.00	263.69	13458.07	0.242	28.120	0.002	0.009	
336	Ga7As10	100.00	35.48	13493.54	---	28.120	0.002	0.012	
337	t-636.5	0.00	10.00	13503.54	---	28.118	0.002	0.011	
338	chgSi chgC As10	0.00	60.00	13563.54	---	28.118	0.390	0.400	
339	chgTemp As10	0.00	2.00	13565.54	---	10.066	0.390	0.400	
340	BeepAs10	0.00	10.00	13575.54	---	10.071	0.392	0.400	

total layers: 340  
 total time: 13575.54 sec.  
 total thickness: 27315.8 A.

SAMPLE: 2-22-10.1 STRUCTURE: 2Dx1 MEASURED: 2/23/2010 5:57 PM  
 POSITION: A DARK CONTACTS: flats MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 304.5 Ro: 3.0177E+3 Rh: 1.1382E+7 M: 3.7718E+3 D: 5.4911E+11  
 T: 77.3 Ro: 1.6457E+2 Rh: 2.7751E+7 M: 1.6863E+5 D: 2.2522E+11  
 T: 4.0 Ro: 5.7146E+0 Rh: 4.1194E+7 M: 7.2086E+6 D: 1.5172E+11  
 SAMPLE: 2-22-10.1 STRUCTURE: 2Dx1 MEASURED: 2/23/2010 6:12 PM  
 POSITION: A DARK CONTACTS: corners MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 3.8 Ro: 4.7320E+0 Rh: 4.0761E+7 M: 8.6138E+6 D: 1.5333E+11  
 AFTER LIGHT Ro: 4.4069E+0 Rh: 3.8673E+7 M: 8.7755E+6 D: 1.6161E+11  
 SAMPLE: 2-22-10.1 STRUCTURE: 2Dx1 MEASURED: 2/23/2010 6:18 PM  
 POSITION: A AFTER LIGHT CONTACTS: flats MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 3.8 Ro: 5.3585E+0 Rh: 3.7894E+7 M: 7.0717E+6 D: 1.6493E+11

see fractions to 3/15

18.7M

1.61"

2-23-10.1 - Actual Results  
 Substrate: WT 19614 #49 block VI  
 As Temp: 292  
 As Set: 7.8e-6  
 Comments:

*Angela less Si*

*less than usual Si  
 in doping wells may  
 help "switchiness"*

label	relay	rate	temp	set pt
A18	1	0.9036	1005.000	17.900
Ga7	2	2.8187	929.000	929.000

Layer#	Layer Type	Thickness	Time	Total Time	A18	Sub (V)	Si (A)	C (A)
1	chgSi chgC As10	0.00	60.00	60.00	---	26.410	0.001	0.011
2	Ga7As10	7000.00	2483.41	2543.41	---	26.408	0.000	0.009
3	PauseAs10	0.00	3000.00	5543.41	---	26.408	0.001	0.013
4*	A18Ga7As10	100.00	26.87	5570.28	0.243	26.407	0.001	0.013
5*	Ga7As10	30.00	10.64	5580.92	---	26.407	0.000	0.012
6* (100)	PauseAs10	0.00	15.00	5595.92	---	26.409	0.000	0.013
304	A18Ga7As10	2500.00	671.63	11465.87	0.243	26.409	0.000	0.010
305	t-641.9	0.00	10.00	11475.87	---	26.407	0.000	0.012
306	A18As10	19.81	21.92	11497.80	---	26.408	0.002	0.009
307	Ga7As10	5.66	2.01	11499.80	---	26.409	0.001	0.011
308	chgTemp As10	0.00	120.00	11619.80	---	0.020	0.002	0.010
309	chgTemp As10	0.00	2.00	11621.80	---	18.100	0.002	0.011
310	chgSi As10	0.00	15.00	11636.80	---	18.099	7.413	0.011
311	SiAs10	0.00	17.00	11653.80	---	18.098	7.414	0.010
312	chgSi As10	0.00	10.00	11663.80	---	18.098	0.000	0.009
313	Ga7As10	22.64	8.03	11671.84	---	18.098	0.000	0.009
314	t-445.8	0.00	10.00	11681.84	---	18.098	0.000	0.010
315	chgTemp As10	0.00	107.00	11788.84	---	32.158	0.000	0.012
316	startTempAs10	0.00	2.00	11790.84	---	26.409	0.000	0.013
317	A18As10	19.80	21.91	11812.75	---	26.409	0.000	0.013
318	A18Ga7As10	800.00	214.92	12027.67	0.243	26.408	0.002	0.011
319	Ga7As10	300.00	106.43	12134.10	---	26.409	0.000	0.011
320	A18Ga7As10	800.00	214.92	12349.02	0.243	26.408	0.000	0.010
321	t-643.4	0.00	10.00	12359.02	---	26.409	0.001	0.008
322	A18As10	19.81	21.92	12380.95	---	26.407	0.001	0.009
323	PauseAs10	0.00	10.00	12390.95	---	26.409	0.001	0.009
324	Ga7As10	5.66	2.01	12392.95	---	26.407	0.000	0.010
325	chgTemp As10	0.00	120.00	12512.95	---	0.016	0.000	0.011
326	chgTemp As10	0.00	2.00	12514.95	---	18.100	0.000	0.012
327	chgSi As10	0.00	15.00	12529.95	---	18.096	7.413	0.011
328	SiAs10	0.00	33.00	12562.95	---	18.096	7.413	0.011
329	chgSi As10	0.00	10.00	12572.95	---	18.099	0.000	0.012
330	Ga7As10	22.64	8.03	12580.99	---	18.100	0.000	0.011
331	t-454.4	0.00	10.00	12590.99	---	18.099	0.000	0.011
332	chgTemp As10	0.00	107.00	12697.99	---	32.156	0.002	0.011
333	startTempAs10	0.00	2.00	12699.99	---	26.404	0.001	0.010
334	A18As10	19.81	21.92	12721.91	---	26.405	0.002	0.010
335	A18Ga7As10	980.00	263.28	12985.19	0.243	26.405	0.001	0.011
336	Ga7As10	100.00	35.48	13020.67	---	26.405	0.000	0.010
337	t-638.0	0.00	10.00	13030.67	---	26.405	0.000	0.010
338	chgSi chgC As10	0.00	60.00	13090.67	---	26.404	0.388	0.401
339	chgTemp As10	0.00	2.00	13092.67	---	10.072	0.390	0.400
340	BeepAs10	0.00	10.00	13102.67	---	10.072	0.387	0.401

total layers: 340  
 total time: 13102.67 sec.  
 total thickness: 25615.8 A.

SAMPLE: 2-23-10.1 STRUCTURE: 2Dx1 MEASURED: 2/23/2010 6:38 PM  
 POSITION: A DARK CONTACTS: flats MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 302.1 Ro: 2.0217E+3 Rh: 1.0005E+7 M: 4.9490E+3 D: 6.2468E+11  
 T: 77.6 Ro: 8.5104E+1 Rh: 1.5733E+7 M: 1.8487E+5 D: 3.9725E+11  
 T: 3.8 Ro: 2.5562E+0 Rh: 2.2257E+7 M: 8.7074E+6 D: 2.8081E+11  
 AFTER LIGHT  
 T: 3.8 Ro: 2.4861E+0 Rh: 2.0541E+7 M: 8.2622E+6 D: 3.0427E+11  
 SAMPLE: 2-23-10.1 STRUCTURE: 2Dx1 MEASURED: 2/23/2010 6:53 PM  
 POSITION: A AFTER LIGHT CONTACTS: corners MANUAL CONTROL  
 COMMENTS:  
 SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
 T: 3.8 Ro: 2.2137E+0 Rh: 2.0678E+7 M: 9.3406E+6 D: 3.0226E+11

25-3 M

3-03"



10\_12\_10.1 - Actual Results  
Substrate: AXT 18460 #29 block X  
As Temp: 296  
As Set: 8e-6  
Comments: Javad, Loren, shallow 3ell exact for real estate

copy 8-4-10.3 = which measured 26.1m/roll. on.

161

label	relay	rate	temp	set pt
A18	1	0.8990	1003.000	1002.000
Ga7	2	2.8357	929.000	929.000
Ga5	3	2.1183	875.000	875.000

Layer#	Layer Type	Thickness	Time	Total Time	A18	Sub (V)	Si (A)	C (A)
1	chgSi chgC As10	0.00	60.00	60.00	---	29.664	0.003	0.013
2	Ga7As10	3000.00	1057.94	1117.94	---	29.659	0.004	0.013
3	PauseAs10	0.00	600.00	1717.94	---	29.661	0.004	0.013
4*	Ga5As10	23.00	10.86	1728.80	---	29.661	0.006	0.013
5*	PauseAs10	0.00	5.00	1733.80	---	29.658	0.004	0.013
6* (25)	A18Ga5As10	84.90	28.14	1761.94	0.298	29.660	0.006	0.013
79	Ga5As10	23.00	10.86	1828.69	---	29.659	0.006	0.013
80	PauseAs10	0.00	600.00	2428.69	---	29.655	0.004	0.013
81*	Ga5As10	23.00	10.86	2439.54	---	29.658	0.004	0.012
82*	PauseAs10	0.00	5.00	2444.54	---	29.659	0.003	0.013
83* (25)	A18Ga5As10	84.90	28.14	2472.68	0.298	29.658	0.004	0.013
156	Ga5As10	23.00	10.86	2483.54	---	29.658	0.004	0.013
157	PauseAs10	0.00	600.00	3083.54	---	29.656	0.004	0.013
158*	Ga5As10	23.00	10.86	3094.40	---	29.654	0.006	0.012
159*	PauseAs10	0.00	5.00	3099.40	---	29.655	0.004	0.013
160* (50)	A18Ga5As10	84.90	28.14	3127.54	0.298	29.655	0.003	0.013
308	A18Ga5As10	2500.00	828.56	3956.10	0.298	29.655	0.004	0.012
309	t-648.4	0.00	10.00	3966.10	---	29.656	0.006	0.013
310	A18As10	19.81	22.04	3988.14	---	29.654	0.006	0.013
311	Ga5As10	5.66	2.67	3990.81	---	29.654	0.006	0.013
312	chgTemp As10	0.00	65.00	4055.81	---	0.026	0.003	0.012
313	chgTemp As10	0.00	2.00	4057.81	---	20.099	0.002	0.011
314	chgSi As10	0.00	15.00	4072.81	---	20.102	6.916	0.012
315	SiAs10	0.00	38.00	4110.81	---	20.103	6.916	0.012
316	chgSi As10	0.00	10.00	4120.81	---	20.101	0.000	0.012
317	Ga5As10	22.64	10.69	4131.50	---	20.102	0.006	0.012
318	t-499.1	0.00	10.00	4141.50	---	20.102	0.004	0.011
319	chgTemp As10	0.00	75.00	4216.50	---	32.176	0.004	0.011
320	startTempAs10	0.00	2.00	4218.50	---	29.652	0.003	0.011
321	A18As10	19.81	22.04	4240.54	---	29.653	0.002	0.009
322	A18Ga5As10	400.00	132.57	4373.11	0.298	29.653	0.006	0.011
323	t-645.6	0.00	10.00	4383.11	---	29.655	0.002	0.013
324	A18Ga7As10	400.00	107.10	4490.21	0.241	29.654	0.002	0.013
325	Ga7As10	290.00	102.27	4592.48	---	29.654	0.002	0.011
326	A18Ga7As10	400.00	107.10	4700.58	0.241	29.653	0.002	0.011
327	A18Ga5As10	400.00	132.57	4833.15	0.298	29.654	0.003	0.012
328	A18As10	19.81	22.04	4855.19	---	29.655	0.002	0.012
329	Ga5As10	5.66	2.67	4857.86	---	29.652	0.002	0.012
330	chgTemp As10	0.00	65.00	4922.86	---	0.028	0.002	0.013
331	chgTemp As10	0.00	2.00	4924.86	---	20.112	0.002	0.013
332	chgSi As10	0.00	15.00	4939.86	---	20.102	6.915	0.010
333	SiAs10	0.00	38.00	4977.86	---	20.101	6.915	0.012
334	chgSi As10	0.00	10.00	4987.86	---	20.104	0.000	0.013
335	Ga5As10	22.64	10.69	4998.55	---	20.104	0.002	0.013
336	t-500.5	0.00	10.00	5008.55	---	20.102	0.003	0.015
337	chgTemp As10	0.00	75.00	5083.55	---	32.176	0.003	0.013
338	startTempAs10	0.00	2.00	5085.55	---	29.652	0.003	0.015
339	A18As10	19.81	22.04	5107.59	---	29.651	0.003	0.013
340	A18Ga5As10	500.00	165.71	5273.30	0.298	29.652	0.002	0.013
341	t-644.9	0.00	10.00	5283.30	---	29.651	0.002	0.013
342	Ga5As10	5.66	2.67	5285.97	---	29.654	0.002	0.013
343	chgTemp As10	0.00	15.00	5300.97	---	0.027	0.002	0.013
344	chgTemp As10	0.00	2.00	5302.97	---	26.133	0.002	0.013
345	chgSi As10	0.00	15.00	5317.97	---	26.128	6.913	0.013
346	SiAs10	0.00	105.00	5422.97	---	26.126	6.913	0.012
347	Ga5SiAs10	5.66	2.67	5425.64	---	26.127	6.913	0.013
348	A18Ga5As10	180.00	59.66	5485.30	0.298	26.126	6.913	0.013
349	Ga5As10	140.00	66.09	5551.39	---	26.127	6.913	0.012
350	chgSi SAMPLE: 10-12-10.1				STRUCTURE: 2Dx1 MEASURED: 10/14/2010			2:51 PM '01
351	t-595 POSITION: A				DARK CONTACTS: flats MANUAL CONTROL			
352	chgTer COMMENTS: 9 min ann							
353	BeepAs SOURCE CURRENT: 10.0uA							

total layers: 353 T: 77.3 Ro: 2.0663E+3 Rh: 1.0698E+7 M: 5.1775E+3 D: 5.8422E+11  
total time: 9844.04: 3.8 Ro: 8.8971E+1 Rh: 1.6543E+7 M: 1.8594E+5 D: 3.7780E+11  
total thickness: 191TER LIGHT Ro: 2.5430E+0 Rh: 2.2585E+7 M: 8.8811E+6 D: 2.7674E+11

3.8 Ro: 2.4755E+0 Rh: 2.1968E+7 M: 8.8743E+6 D: 2.8450E+11  
PLE: 10-12-10.1 STRUCTURE: 2Dx1 MEASURED: 10/14/2010 3:06 PM  
TION: A AFTER LIGHT CONTACTS: corners MANUAL CONTROL  
NTS: 9 min ann  
CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
Ro: 2.7705E+0 Rh: 2.2241E+7 M: 8.0278E+6 D: 2.8102E+11

Nice 2DEG

1695A deep 2DEG

22-1M

2.83"

NO // conduction

10\_12\_10.2 - Actual Results  
Substrate: AXT 18460 #31 BB  
As Temp: 296  
As Set: 7.8e-6  
Comments: shallow Javad 2ell 2100% deep

163

label	relay	rate	temp	set pt
A18	1	0.8990	1003.000	1002.000
Ga7	2	2.8357	929.000	929.000
Ga5	3	2.1183	875.000	875.000

Layer#	Layer Type	Thickness	Time	Total Time	A18	Sub (V)	Si (A)	C (A)
1	chgSi chgC As10	0.00	60.00	60.00	---	22.404	0.004	0.012
2	Ga7As10	3000.00	1057.94	1117.94	---	22.405	0.003	0.013
3	PauseAs10	0.00	600.00	1717.94	---	22.405	0.002	0.015
4*	Ga5As10	23.00	10.86	1728.80	---	22.405	0.002	0.013
5*	PauseAs10	0.00	5.00	1733.80	---	22.404	0.004	0.012
6* (25)	A18Ga5As10	84.90	28.14	1761.94	0.298	22.407	0.003	0.013
79	Ga5As10	23.00	10.86	2828.69	---	22.404	0.004	0.013
80	PauseAs10	0.00	600.00	3428.69	---	22.407	0.003	0.013
81*	Ga5As10	23.00	10.86	3439.54	---	22.405	0.002	0.015
82*	PauseAs10	0.00	5.00	3444.54	---	22.405	0.004	0.012
83* (25)	A18Ga5As10	84.90	28.14	3472.68	0.298	22.404	0.004	0.012
156	Ga5As10	23.00	10.86	4539.43	---	22.405	0.003	0.013
157	PauseAs10	0.00	600.00	5139.43	---	22.406	0.002	0.013
158*	Ga5As10	23.00	10.86	5150.29	---	22.407	0.002	0.016
159*	PauseAs10	0.00	5.00	5155.29	---	22.409	0.003	0.015
160* (50)	A18Ga5As10	84.90	28.14	5183.43	0.298	22.407	0.002	0.015
308	A18Ga5As10	2500.00	828.56	8167.76	0.298	22.407	0.003	0.013
309	t-646.7	0.00	10.00	8177.76	---	22.406	0.004	0.012
310	A18As10	19.81	22.04	8199.80	---	22.407	0.003	0.013
311	Ga5As10	5.66	2.67	8202.47	---	22.407	0.004	0.013
312	chgTemp As10	0.00	65.00	8267.47	---	0.022	0.003	0.012
313	chgTemp As10	0.00	2.00	8269.47	---	13.189	0.003	0.012
314	chgSi As10	0.00	15.00	8284.47	---	13.188	6.915	0.012
315	SiAs10	0.00	28.00	8312.47	---	13.188	6.915	0.012
316	chgSi As10	0.00	10.00	8322.47	---	13.189	0.000	0.013
317	Ga5As10	22.64	10.69	8333.16	---	13.191	0.002	0.013
318	t-485.4	0.00	10.00	8343.16	---	13.190	0.002	0.013
319	chgTemp As10	0.00	30.00	8373.16	---	32.170	0.002	0.012
320	startTempAs10	0.00	2.00	8375.16	---	22.405	0.002	0.013
321	A18As10	19.81	22.04	8397.19	---	22.405	0.002	0.013
322	A18Ga5As10	400.00	132.57	8529.76	0.298	22.404	0.002	0.013
323	t-643.4	0.00	10.00	8539.76	---	22.406	0.002	0.012
324	A18Ga7As10	800.00	214.21	8753.97	0.241	22.406	0.002	0.012
325	Ga7As10	330.00	116.37	8870.34	---	22.404	0.002	0.012
326	A18Ga7As10	800.00	214.21	9084.55	0.241	22.405	0.002	0.013
327	A18Ga5As10	400.00	132.57	9217.12	0.298	22.406	0.003	0.013
328	A18As10	19.81	22.04	9239.15	---	22.405	0.003	0.013
329	Ga5As10	5.66	2.67	9241.83	---	22.406	0.002	0.012
330	chgTemp As10	0.00	65.00	9306.83	---	0.025	0.002	0.013
331	chgTemp As10	0.00	2.00	9308.83	---	13.190	0.002	0.013
332	chgSi As10	0.00	15.00	9323.83	---	13.190	6.912	0.012
333	SiAs10	0.00	28.00	9351.83	---	13.190	6.913	0.013
334	chgSi As10	0.00	10.00	9361.83	---	13.190	0.000	0.013
335	Ga5As10	22.64	10.69	9372.51	---	13.191	0.002	0.013
336	t-484.0	0.00	10.00	9382.51	---	13.190	0.002	0.013
337	chgTemp As10	0.00	30.00	9412.51	---	32.173	0.002	0.013
338	startTempAs10	0.00	2.00	9414.51	---	22.402	0.002	0.012
339	A18As10	19.81	22.04	9436.55	---	22.402	0.004	0.012
340	A18Ga5As10	500.00	165.71	9602.26	0.298	22.405	0.003	0.012
341	Ga5As10	5.66	2.67	9604.93	---	22.410	0.004	0.012
342	chgTemp As10	0.00	15.00	9619.93	---	0.026	0.004	0.012
343	chgTemp As10	0.00	2.00	9621.93	---	19.416	0.002	0.013
344	chgSi As10	0.00	15.00	9636.93	---	19.413	6.913	0.013
345	SiAs10	0.00	105.00	9741.93	---	19.412	6.913	0.013
346	A18Ga5As10	180.00	59.66	9801.59	0.298	19.415	6.912	0.013
347	Ga5As10	140.00	66.09	9867.68	---	19.414	6.913	0.013
348	chgSi chgC As10	0.00	60.00	9927.68	---	19.414	0.390	0.402
349	chgTemp As	SAMPLE: 10-12-10.2			STRUCTURE: 2Dx1 MEASURED: 10/14/2010			2:51 PM
350	BeepAs10	POSITION: B			DARK CONTACTS: flats MANUAL CONTROL			

total layers: 350  
total time: 9939.68  
total thickness: 200

SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
T: 296.5 Ro: 3.1249E+3 Rh: 1.6303E+7 M: 5.2172E+3 D: 3.8335E+11  
T: 77.4 Ro: 1.3109E+2 Rh: 2.3987E+7 M: 1.8298E+5 D: 2.6055E+11  
T: 3.8 Ro: 4.6031E+0 Rh: 3.3258E+7 M: 7.2251E+6 D: 1.8793E+11

AFTER LIGHT  
T: 3.8 Ro: 4.1513E+0 Rh: 3.1829E+7 M: 7.6671E+6 D: 1.9636E+11  
SAMPLE: 10-12-10.2 STRUCTURE: 2Dx1 MEASURED: 10/14/2010 3:07 PM  
POSITION: B AFTER LIGHT CONTACTS: corners MANUAL CONTROL  
COMMENTS: 9 min ann

SOURCE CURRENT: 10.0uA MAGNET CALIBRATION (G/A): 153.0 MAGNET CURRENT (A): 3.0  
T: 3.8 Ro: 4.2524E+0 Rh: 3.2182E+7 M: 7.5678E+6 D: 1.9421E+11

7-21-10-2 was a better version of this

24.3M (2.8e6)

NICE

18.1M

1.96"